

## CLAIMS

### WHAT IS CLAIMED IS:

1. A continuous liquid infusion device comprising:

a liquid syringe section; and

5 a driving pump section to be mounted on said liquid syringe section, wherein:

said liquid syringe section has a liquid infusion port at one end and an opening at the other end connected with a bottom end part of said driving pump section; a liquid filling chamber in communication with the liquid infusion port; and a pushing member including a peripheral edge in sliding contact with an inner circumferential wall of the liquid filling chamber, the pushing member being slidable due to the peripheral edge to reciprocate liquid-tightly and air-tightly in an axis direction of said liquid syringe section;

said driving pump section has a liquid pushout plunger barrel and an internal negative pressure cylinder to be inserted and fitted into the liquid pushout plunger barrel, the liquid pushout plunger barrel including the bottom end part abutting on an upper edge of the pushing member and at least two pressing arms in connection with the bottom end part and to be inserted and fitted into the liquid filling chamber along the inner circumferential wall, and the internal negative pressure cylinder containing a negative pressure chamber and having a piston inserted and fitted thereinto, the piston sliding in the axis direction of the negative pressure chamber air-tightly to produce negative pressure;

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by sliding the pressing arms of said driving pump section toward an upper end, the piston in the negative pressure chamber is slidably pushed up in the axis direction to produce negative pressure in the negative pressure chamber, and the liquid pushout plunger barrel is biased toward the upper edge of the pushing member via a locking member engaged with the piston by utilizing returning force of the piston due to the negative pressure so that the biased pushing member pushes liquid in the liquid syringe out of the liquid infusion port.

2. The continuous liquid infusion device according to claim 1, wherein

said liquid syringe section and said driving pump section are separably structured.

3. The continuous liquid infusion device according to claim 1, wherein

said liquid syringe section is structured of a plurality of auxiliary syringe parts and has pressing arms and bottom end parts corresponding to the pushing members, respectively, the pushing members being inserted and fitted into the plurality of auxiliary syringe parts.

4. The continuous liquid infusion device according to claim 2, wherein

said liquid syringe section is structured of a plurality of auxiliary syringe parts and has pressing arms and bottom end parts corresponding to the pushing members, respectively, the pushing members being inserted and fitted into the plurality of auxiliary syringe parts.

5. A continuous liquid infusion device, comprising:

a first structure having a vacuum pump barrel which has an open/close valve at its front end and an open rear end, a piston fitted into the vacuum pump barrel air-tightly, a stopper capable of locking the piston at the rear end of the vacuum pump barrel against atmospheric pressure, and a pusher movable in the same direction as that of the piston outside the vacuum pump barrel; and

a second structure having a liquid syringe which has a liquid port at its front end and an open rear end, and a piston fitted into the liquid syringe liquid-tightly, wherein said first structure and said second structure are removably connected.

6. The continuous liquid infusion device according to claim 5, wherein

said first structure and said second structure are connectable in a state in which the front end of the vacuum pump barrel of said first structure extends further forward than the front end of the liquid syringe.

7. The continuous liquid infusion device according to claim 5, wherein

the first structure has dual pushers and the second structure has dual liquid syringes.

8. The continuous liquid infusion device according to claim 6, wherein

the first structure has dual pushers and the second structure has dual liquid syringes.